

THE ROLE OF INSTITUTIONAL FACTORS IN MATERNAL MORTALITY FROM OBSTRUCTED LABOUR

EDEM J. UDOMA, ASUQUO D. EKANEM, MILDRED E. JOHN, ATIM I. ESHIET

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ABSTRACT

We conducted a ten-year review of maternal mortality from obstructed labour in University of Calabar Teaching Hospital (UCTH), between January 1st 1990 and December 31st 1999. The aim was to examine the role of Institutional factors in maternal mortality arising from this condition. The review showed that a total of 702 patients were managed as a result of obstructed labour giving an incidence of 3.7%. Fifty-five patients died giving a case fatality rate (CFR) of 7.8%. Fifty-one (92.7%) of the patients who died were not booked, thirty-four (61%) were brought from spiritual churches, while 17(31%) were from the traditional birth attendants' (TBAs) homes

Four (7.2%) were booked cases who were earlier scheduled for elective caesarean section but defaulted and reported late in labour with ruptured uterus. All patients were in social classes IV and V. Although 48(47.3%) of these patients were seen by doctors within one hour of admission, only 6(10.9%) had initial assessment by senior doctors. Five (9.1%) had surgery within two hours of admission, 21(38.2%) had surgery in four hours of admission whereas 29(52.7%) had surgery after four hours of admission. The probable causes of maternal deaths were haemorrhage 24(43.6%), septicemia 5(27.3%), post operative shock 8(14.5%) renal failure 5(9.1%) anaesthetic deaths 3(5.5%). The twenty-four patients who died from haemorrhage had no blood transfusion. Nine of the patients who died from septicemia had no antibiotics before surgery. Anaesthetic deaths were seen in those who were managed by junior residents in conjunction with the anaesthetic nursing staff. Suggestions are offered on how to improve the quality of services provided by our hospitals with the aim of reducing maternal mortality from it.

Keywords: Maternal mortality, Obstructed Labour, Institutional factors

INTRODUCTION:

Maternal mortality from obstructed labour is rare in developed countries due to improved antenatal and intrapartum care (Otolurin and Adelusi 1981). In the developing countries however, maternal mortality due to this condition has continued to be high (Lister 1967, Megafu and Nweke, 1989). This is attributed to lack of antenatal care and delivery in sub-optimal conditions (Udoma et al 1999). For example, several reports indicate that mothers who experience maternal deaths are more likely to be those who did not receive antenatal care

(Harrison et al 1985), those who reported late in hospital when they develop complications (Okonofua et al 1992); or those who were attended to at delivery by unqualified personnel (Adetoro 1987). According to the Nigerian demographic and health survey, only 30 percent of Nigerian women deliver in health institutions (Nigerian Demographic and Health Survey, 1992). majority deliver in the homes of the traditional birth attendants and spiritual churches (Udoma et al 1999). In Nigeria, spiritual churches or prayer houses are popular resort of the sick and are actively involved in obstetric care

(Adetunji 1992). More recently, the activities of this rapidly growing but controversial evangelistic protestant movement have contributed to obstetric complications (Harrison 1997). They are popular resort for pregnant women and women in labour and only reluctantly release cases of obstetric complications to orthodox health centers when the cases have reached an advanced stage of labour. The question is why do our women continue to deliver outside orthodox health institutions despite this risk? Low literacy level and lack of health education are some of the factors that are attributed to this low level of acceptance (Harrison et al 1985). The result therefore is that Nigerian hospitals are faced with a high number of complicated obstetric cases to cater for. The budgetary allocation for health in Nigeria is usually below the World Health Organisation recommendation. With this in mind, can the Nigerian hospitals actually cope with this teeming population of complicated obstetric cases? It therefore becomes necessary to investigate the level of our hospital preparedness in the management of complications arising from obstructed labour, with the aim of examining the role of hospital care in maternal mortality arising from this condition. To the best of the knowledge of the authors no similar study has been done in our environment. Such information could be used to formulate policies to improve the quality of services provided by our hospitals with the aim of reducing maternal mortality from it.

MATERIAL AND METHODS

The study was based on a retrospective analysis of all maternal deaths from obstructed labour at the University of Calabar Teaching Hospital (UCTH), Nigeria from January 1st 1990 and December 31st 1999. The hospital offers routine obstetric care to the residents of Calabar with a population of 400,000, while serving as the major referral obstetric facility to the whole South Eastern Nigeria. The hospital introduced a drug revolving loan scheme in 1990 where patients are made to pay for the hospital consumables upfront before the initiation of treatment. The review showed that a total of 702 patients were managed

as a result of obstructed labour. Information abstracted from the records included social class, booking status, place of antenatal care, points of contact during labour, educational status of patients and cadre of surgeons/anaesthetists. The duration of labour before admission to hospital, complications and outcome were also noted. Each subject in the study was allocated to one of the five social classes according to a scoring system based on her education and her husband's occupation (Olusanya et al 1985). Educational status was categorized into four: high, medium, low, zero or no education. People with University degrees or qualification requiring 13 years or more of education were included in high education group. Medium education was defined as secondary and vocational training, or high school requiring 10 – 12 years of education, low education corresponds to a basic education of fewer than 10 years, those with no formal education were classified as zero education.

Each woman's social class was obtained by adding her score from her educational attainment to that of her husband's occupation. Social classes I and II represented the elites, class III the middle class of Nurses, Clerks and Technicians, while class IV and V represented the lowest rungs of our socio-economic ladder. Patients' relatives refused the request for autopsy, thus the cause(s) of death were based on clinical diagnosis in all the cases. Data were analyzed using simple percentages.

RESULTS

During the period under study, there were 18,980 deliveries; obstructed labour complicated 702 cases giving an incidence of 3.7%. Fifty-five patients died giving a case fatality rate (CFR) of 7.8%. Fifty-one (92.7%) of the patients who died were not booked, thirty-four (61%) were brought in from spiritual churches, while 17(31%) were from the traditional birth attendants' (TBAs) homes, four (7.2%) were booked cases who were earlier scheduled for elective caesarean sections at various conventional health centers but they defaulted and reported late in labour with ruptured gravid uterus in UCTH. All patients who died

TABLE 1 DURATION OF LABOUR BEFORE ADMISSION FROM VARIOUS GROUPS IN FATAL CASES

Time in hours	Conventional health center		Traditional birth attendant		Spiritual churches		Total	
	Number	%	Number	%	Number	%	Number	%
0 - 12	3	75	4	23.5	0	0	7	12.7
13 - 24	1	25	6	35.3	5	14.7	12	21.8
25 - 36			3	17.6	9	26.5	12	21.8
37 - 48			2	11.8	15	41.1	17	30.9
49 - 60			2	11.8	3	8.8	5	9.1
61 - 72					2	5.9	2	3.6
Total	4	100	17	100	34	100	55	100

were in social classes IV and V.

The duration of labour before admission into University of Calabar Teaching Hospital (UCTH) and maternal mortality are shown in Table 1. Four of the cases were referred from conventional health centres and three out of these came within 12 hours of onset of labour, one came after 12 hours but within 24 hours. Majority of cases admitted after 24 hours came from TBAs and spiritual churches. Although 48 (87.3%) of these patients were seen by doctors within one hour of admission, only 6(10.9%) had initial assessment by senior doctors. Five (9.1%) had surgery within two hours of admission. 21 (38.2%) had surgery within four hours of admission whereas 29(52.7%) had surgery after four hours of admission. Documented reasons of delay and average duration between diagnosis and surgical intervention is seen in table III. Late arrival of surgical team caused a delay of six hours in 18(32.7%), lack of funds delayed the intervention for five hours in 11(20.0%) of patients, late arrival of supporting staff caused a delay in 11(20.0%) of patient for four hours, while lack of ambulance services was a cause of delay in 10(18.5%) of patients for three hours, lack of electricity supply and lack of theatre materials delayed intervention for two hours each in 3(5.5%), and 2(3.6%) of patients respectively.

The probable causes of maternal deaths were haemorrhage 24(43.6%), septicemia 15(27.3%), post operative shock 8 (14.5%), renal failure 5(9.1%) and anaesthetic deaths 3(5.5%).

Twenty-four patients who died from haemorrhage had no blood transfusion pre or intra operatively as there was no blood in the bank and moreover the relatives of these patients were unwilling to donate blood. Seven of them had blood transfusion within twenty-four hours post operatively and eight of them had no blood transfusion at all. Nine (60%) of the patients who died from septicemia had no antibiotics before surgery, four (26.7%) of the patients had antibiotics after forty-eight hours of operation, as they could not afford these drugs earlier, only two (13.3%) patients had antibiotics preoperatively. Anaesthetic deaths were seen in three (5.5%) patients and were managed by junior residents in conjunction with the anaesthetic nursing staff.

DISCUSSION

The study has shown that most of the factors that contribute to maternal mortality from obstructed labour are preventable and lack of antenatal care has been a major predisposing factor. Those who died were in social class IV and V. This is not surprising as Nigeria is one of the poorest nations in terms of gross national product per capita income (Harrison 1997). The current economic down turn has made the gap between the rich and the poor even wider. With the sudden increase in hospital fees, more women are patronizing the spiritual churches, and traditional birth attendants, seeking refuge in God and also using cheaper health services. This explanation seems plausible given that people

TABLE 2 DOCUMENTED REASONS FOR DELAY AND AVERAGE DURATION BETWEEN DIAGNOSIS AND SURGICAL INTERVENTION.

Reasons	Average duration of delay in hours	Number of cases	Percentage (%)
Surgical team	6	18	32.7
Funds	5	11	20.0
Support staff	4	11	20.0
Ambulance services	3	10	18.2
Electricity supply	2	3	5.5
Theatre materials	2	2	3.6
Total	-	55	100

wittingly or unwittingly count economic cost in almost every facet of life (Adetunji, 1992). The cost of operative delivery in modern health facilities ranges between thirty thousand Naira to upwards of fifty thousand Naira. This is far out of the reach of the poor.

Although 48(87.3%) of these patients were seen by doctors within one hour of admission, the cadre of doctors who saw them were pre-registration house officers and junior residents with little experience in the management of patients. There was often delay in contacting the experienced doctors due to lack of transport and other communication systems as most of them lived far away from the hospital.

This resulted in the majority of patients having operative intervention after four hours of admission to hospital. Delay in intervention was also due to inability of the patient to provide medical consumables needed in the hospital for resuscitation and definitive treatment, a situation which is common in Nigerian hospitals. This practice tends to be of economic benefit to the hospital as more funds are generated but detrimental to the patient who may not have readily available funds to pay for this. In some circumstances where patients were able to afford these, there was lack of these consumables in the hospital.

Failure to appreciate the importance of adequate resuscitation on the part of doctor's most especially junior doctors before operation was also a contributing factor to these mortalities. In most cases antibiotics were used arbitrarily as patients could not afford extra money for basic

investigations. Also in majority of cases, blood was not available for transfusion pre and post operatively. The reason being that relatives of patients who were requested to donate blood when their relations were admitted into the Hospital refused to do so. This method causes considerable delay as has been reported by Unuigbe et al 1988; Ottong et al 1997. Sometimes the relatives were afraid to donate blood. This is probably due to ignorance and superstitious beliefs in this environment that removal of this important fluid of life (blood) reduces life expectancy of the donor, causes loss of libido and transfers obnoxious traits (Ottong et al 1997). Anaesthetic deaths were seen in those patients who had general anaesthesia, and given by inexperienced registrars in conjunction with the anaesthetic nursing staff. They had difficulty in securing patent airway in patients with masseter spasm, pharyngeal and laryngeal oedema with profuse vomiting respectively. Regional anaesthesia would have averted these deaths (Iquir 1994).

The prevention of these factors rely on the eradication of illiteracy amongst our women by provision of free and compulsory education up to senior secondary school level, integration of health education in the curriculum of schools and creating more job opportunities which will improve the social class of our populace. There should be an efficient communication system in our tertiary hospitals and provision of accommodation within the hospital premises for senior doctors. Most importantly, there is need for increased provision and improvement of existing maternal services

and establishment of outreach programmes for women living far away from existing health centres. There is also need to reassess hospital routines and practice to identify areas that may hinder utilization of services and improve care provision to enhance utilization. Drug revolving scheme as currently practiced will become a welcome idea if emergency cases are excluded from the Scheme. On long term basis, a comprehensive policy of primary health care that improves the access of pregnant women in Nigeria to safe antenatal and intrapartum care by making the hospital cost affordable should be the goal. This will reduce the services provided by unorthodox health care system with improvement in maternal health in the country.

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